



**HAL**  
open science

**An irrigation project slowing down development.  
Waiting for rice**

Delphine Lebrun

► **To cite this version:**

Delphine Lebrun. An irrigation project slowing down development. Waiting for rice. 2009. halshs-01764002

**HAL Id: halshs-01764002**

**<https://shs.hal.science/halshs-01764002>**

Submitted on 11 Apr 2018

**HAL** is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

# An irrigation project slowing down development. Waiting for rice

by [Delphine Lebrun](#) · Published 15/02/2009 · Updated 05/04/2018



An Aerial photograph of the flooded Tana river in Kenya - Public domain - by Sgt R A Ward

Delphine Lebrun, “An irrigation project slowing down development. Waiting for rice”, *Mambo!* Volume VIII, n°2, 2009.

“Let us make it our job, NOT to see through one another, but to see one another through.”  
(Duncan Mwanjila, Project Manager TDIP from 1992 to August 1997)

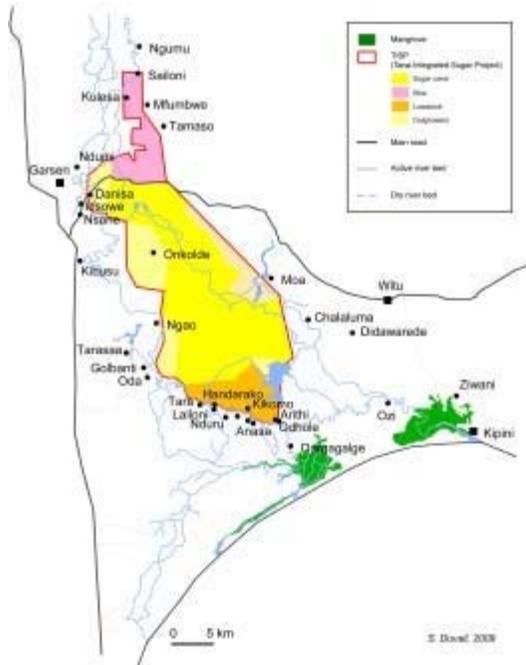
Land in the Tana River Delta is a highly valued resource and consequently a strongly desired asset. As population density in the Tana River Delta District increased at considerable speed over the last decades, access to water and natural resources has become increasingly problematic. Traditionally, local communities used to rely on a wide range of risk-spreading livelihood strategies such as farming, fishing, livestock and beekeeping, hunting, gathering, etc. Their coping mechanisms were based on profound environmental and wetland knowledge and have principally been determined by the flooding regime and seasonal changes of the Tana River (long rainy season from mid-March to mid-June and short rainy season from mid-October to mid-December). Aiming for higher productivity, the introduction of development and irrigation projects has altered traditional usage of natural resources.

However, knowledge of the balance between nature and human activities and the understanding of the services ecosystems provide is of great importance in decision-making on sustainable use.

This study raises the hypothesis that a bottom-up approach to the implementation of development projects with the added value of population consultation might have achieved better results. The study has been conducted within the framework of a multidisciplinary (hydrological, ecological, anthropological) three-year research project on the Tana River Delta coordinated by IRD–IFRA (Institut de Recherche pour le Développement – Institut Français de Recherche en Afrique), in partnership with the National Museum of Kenya (NMK), the Kenya Wildlife Services (KWS) and Tanzanian institutions. The study combines the consultation of existing data and documents with a four-week field visit (15 April to 10 May, 2009). The fieldwork consisted of group discussions and participatory mapping exercises in two predominantly Pokomo and one Orma village, respectively Hewani, Vumbwe and Baandi. Likewise, different transect walks were undertaken in and around the project area. Various stakeholders and resource persons (researchers, TARDA employees ...) were also interviewed. The relevance of this analysis lies in its effort to provide insight into the perception of the advantages and disadvantages of the irrigation project by collecting facts and views from different stakeholders. This information is important in making a comparison of the project's achievements and failures. In this manner, lessons learned from past mistakes can improve the implementation of future projects.

## **Tana Delta Irrigation Project TDIP**

The implementation of the Tana Delta Irrigation Project (TDIP) east of Garsen started in 19881 and covered an area of 2400 ha, called 'Polder 1 North' divided into Blocks A to G. The project was financed by the Japanese Government, through the Japanese Overseas Economic Cooperation Fund (OECF). The Kenyan Government had requested this ODA loan (Overseas Development Aid) in order to increase the country's rice production with the aim of promoting self-sufficiency and import substitution. Since the beginning of the project the Tana and Athi River Development Authority, better known as TARDA, has been the Kenyan parastatal in charge of "advising on the institution and co-ordination of the development project" (Chapter 443, Tana and Athi River Development Authority Act).



This project was intended to raise the living standards and improve food security in the Tana River Delta District. A total of 58.6 billion Kenyan Shillings (725.9 million USD) was made available for the project's infrastructure, machinery, institutions such as schools, health centers, police stations, and more. Nippon Koei Co., Ltd. was the International Consulting Engineering Company appointed by the Japanese Government to conduct and supervise these construction works and the necessary research (e.g. on suitable rice varieties, seed multiplication, etc). By 1997 more than 4.2 billion Ksh (73.7 USD) had been spent and about 80% of the project had been installed. Unfortunately in 1998 the whole region was hit by an El Niño related flood, creating enormous chaos and destroying a great part of the completed infrastructure. The most devastated area was the lower part of the TDIP farm while Blocks A, B, C and D remained relatively undamaged. Due the El Niño floods and related harvest losses (the rice of Block G was totally lost), 1998 was marked by major food shortages, displacements and numerous cholera and malaria victims. After the catastrophe, the TDIP never fully recovered and, even worse, lost its support from the Japanese Government. However, many questions remain. Why was the TDIP never completely rehabilitated, while it could produce tons of good quality rice? How severely could an El Niño destroy a new 58.6 billion Ksh project? What were the reasons for the Japanese leaving the project? How did all this change the livelihood opportunities of the local communities? What role do ethics play in this development project?

## Environment

As perceived through many discussions and testimonies during the fieldwork, life in the Tana River Delta is currently quite tough. Drought, poverty and high unemployment rates are rife. The infrastructure put in place by the TDIP during the late 1980s, early 1990s has had an important influence on the natural environment in the area. The major embankment surrounding the farm was initially welcomed as it ensured flood protection for the villages and their recession agriculture fields or shamba as well as for the existing small-scale irrigation schemes of Hewani,

Wema and Kulesa. The Orma village “Baandi” inside the dyke actually derives its name from the protective band. The Orma community settled there after the construction of the dyke as floods often affected their original village just outside the embankment. The upgrading of roads and access of the area was another positive aspect of the TDIP. It opened up the wetlands to transport and created additional marketing opportunities.

Water supply for irrigation of the farm was regulated through a network of supply and drainage canals around and in between the different TDIP Blocks. Water from the Tana River was diverted through a head canal — north of the farm — and subsequently by a major sluice-gate at Sailoni, composed of an inflatable rubber dam and a system of sluice-gates to regulate the flow into the canals of the irrigation scheme. As the TDIP-controlled area used to be part of a wider wetland ecosystem, connected to many lakes (e.g. Chamadho, Jange, Musenkwa, Mulanja, etc.) and dense forests (Masha, Kirume, Mkuyumbe, etc.); it is not difficult to imagine that the scheme brought big changes to the local ecosystems and the services they provided.

The project continued to produce rice until 2003 and after that the rubber dam was still being used to irrigate shamba from Sailoni to Kulesa. Unfortunately, the inflatable dam burst in 2006, making it impossible to irrigate any plot from that moment on. This means that today people are forced to rely on rainfed agriculture, principally maize. With very low rainfall at Garsen, rainfed agriculture is a very risky bet. As the rains have kept the communities waiting this year, food security is becoming an issue. Moreover, the embankment, its canal system and the upstream river diversions (e.g. at Mnazini) have caused almost all lakes to dry out, reducing the fishing places to a minimum. During flood peaks, the dyke also causes a higher water level outside the TDIP, destroying perennial crops like bananas, mangos, along the river.

It should be mentioned that the 1983 draft EIA report to TARDA already predicted numerous problems but the parastatal refused to recognize these findings. The problems envisaged were the disruption of Orma pastoralists’ use of the rangelands and interference with their ability to water livestock; the toxicity of the mercury-based biocide, “panogeen” (sprayed aerially), and the threat to fragile, disappearing riverine forests and two endangered species of monkey (Hirji and Ortolano, 1991), namely the Tana River Red Colobus *Procolobus rufomitratus* and the Tana River Crested Mangabey *Cercocebus galeritus* (Butynski et al 2008, [www.iucnredlist.org](http://www.iucnredlist.org)).

## **Land and community consultation**

Aside from the environmental and livelihood issues, the project raises a profound ownership issue. The project was implemented under an estate system instead of a tenant system. This means that the management and execution of all processes like production, harvesting and sales was conducted by the TDIP Office. In other words, ploughing, harrowing, sowing, provision and distribution of seeds, water, fertilizer and chemicals was done by the TDIP itself, while the community members guaranteed weeding, bird and wildlife control through casual contracts. As the land in question is County Council trust land, communities have no actual title deed despite having used it for decades. After the construction of the embankment, the executive company TARDA claimed all land inside the protective band was their property. During the fieldwork the

local communities expressed that they were perceived as “squatters on their own land”. Still, TARDA only obtained an allotment letter from the County Council, which is valid for three months, but no title deed. In 1995 the communities took TARDA to the Mombasa High Court (Civil Case No. 660), fighting this land ownership issue. The case is still pending and no statement has been made because of absences in court and “other reasons only known by TARDA” have caused the hearings to be postponed each time. Unfortunately, most of the plaintiffs, essentially village elders, have already passed away.

Many of these complications could have been avoided by a more participatory approach and by applying a tenant system, whereby TARDA would provide water, sell fertilizers and chemicals to the farmers, and buy and process the rice. This system is adopted by the National Irrigation Board (NIB) (e.g. in Mwea and Perkerra) and appears successful.

The local communities complain that they have never properly been consulted about the irrigation project. This lack of grass-roots level interaction is reflected in the various problems and disagreements. One problem, for example, is that the TDIP does not include a grazing corridor for livestock. This created conflict between the farmers, the pastoralists and TARDA about cows and goats grazing in the rice fields. Another problem concerns the population growth in the villages. The TDIP shamba have been boundaries so close to the villages that it has become impossible for villagers to expand their housing plots.

Generally speaking, it can be argued that the communities have faced many unmet promises from TARDA’s end. After the El Niño, the payment of salaries for labour encountered delays and community dissatisfaction has continued unabated.

To conclude, it should be noted that today different foreign companies have come forward to implement other large-scale agriculture projects. Mumias Ltd. and MAT International aim at introducing irrigated sugarcane and Bedford Biofuels wants to grow *Jatropha* in the area. Part of the Delta would be handed over to Qatar for fruit and vegetable production. However, the failure of the TDIP and its approach proves that local communities must be consulted and included in the process if sustainable decision-making is to be achieved. The complexity and diversity of the environment and its livelihood should to be studied in detail before undertaking action. Development is about strengthening the coping mechanisms of the local actors and creating opportunities, not breaking them.

“Today’s problems cannot be solved if we still think the way we thought when we created them.”

Albert Einstein

Delphine Lebrun

At the time this article was written, Delphine Lebrun was an intern at IFRA, working closely with Institut de recherche pour le développement, IRD.

## **Note**

1 The feasibility study was carried out by Haskonning Royal Dutch Consulting Engineers and Architects in November 1982 and updated in 1987, while the EIA study was finalized in July 1985 (with draft reports in December 1982 and October 1983).

## [Download the document in PDF](#)

### References

CHAPTER 443 – Tana and Athi Rivers Development Authority Act, Commencement Date: 6/7/1974

Hirji, R. and Ortolano, L. (1991). Strategies for managing uncertainties imposed by environmental impact assessment. Analysis of a Kenyan River Development Authority. *Environmental Impact Assessment Review* 11, pp. 203-230.

Luke, Q, Hatfield, R., and Cunneyworth, P. (2005) “Rehabilitation of the Tana Delta Irrigation Project, Kenya – an Environmental Assessment.” [unpublished report, Critical Ecosystem Partnership Fund]

IUCN Red List: [www.iucnredlist.org](http://www.iucnredlist.org)

